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NEW SPECIES AND RECORDS OF GALÁPAGOS DIPTERA

By

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Comprehensive reports on the Diptera of the Galápagos Islands have been published by Coquillett (1901), Johnson (1924), and Curran (1932, 1934). Linsley and Usinger (1966) reported eight species in the four families treated in the present paper: Chironomidae (2), Ceratopogonidae (1), Canaceidae (3), and Ephydridae (2). One chironomid, four ceratopogonids, nine canaceids, and six ephydrids are now added to make a total of 28 species of which 11 are described here as new.

For the opportunity to study the Diptera of the listed four families collected by the 1964 Galápagos International Scientific Project, I am greatly indebted to: Dr. Paul H. Arnaud, Jr., of the California Academy of Sciences in San Francisco (abbreviated CAS in the following pages); Mr. D. Q. Cavagnaro (DQC) and Mr. R. O. Schuster (ROS) who collected much of the material; Dr. R. L. Usinger (RLU) of the University of California at Berkeley; Dr. P. D. Ashlock of the B. P. Bishop Museum in Honolulu (BISH); and Dr. Willi Hennig of the Staatliches Museum für Naturkunde in Stuttgart, West Germany. Other material is in the collection of the United States National Museum in Washington, D. C. (USNM).

Family Chironomidae

All the Galápagos chironomids live in the intertidal zone and breed in algae on wave-drenched rocks on the seacoast.

Clunio schmitti Stone and Wirth.

Clunio schmitti Stone and Wirth, 1947, Proc. Ent. Soc. Washington, vol. 49, p. 217 (male; Fernandina; fig. wing, antenna, male genitalia).

Distribution. Galápagos Archipelago (Fernandina; Santa Cruz).

Type. Holotype male, Isla Fernandina, 14 January 1934, W. L. Schmitt (USNM).

New Galápagos Record. Isla Santa Cruz, Academy Bay, 20 February 1964, DQC and ROS, 1 Male (CAS).

Discussion. The single male specimen collected at Academy Bay agrees well with the holotype except for the pilosity of the eyes. The holotype specimen was excessively cleared on the slide, and I suspect that hairs are present, as is universally true in the genus, but no amount of manipulation of the light could bring them into view.

Thalassomya longipes (Johnson).

Galapagomyia longipes Johnson, 1924, Zoologica, vol. 5, p. 86 (male, female; Seymour Bay, Indefatigable; fig. wing, leg). Edwards, 1926, Ins. of Samoa, pt. 6, fasc. 2, p. 61 (note). Curran, 1932, Medd. Zool. Mus. Oslo, no. 30, p. 348 (Floreana, Postoffice Bay).

Thalassomya longipes (Johnson); Edwards, 1935, B. P. Bishop Mus., Bull. 114, p. 87 (combination). Wirth, 1947, Proc. Hawaiian Ent. Soc., vol. 13, p. 136 (discussion). Wirth, 1949, Univ. Calif. Pubs. Ent., vol. 8, p. 169 (redescribed; fig. male genitalia, scutal pattern; Tres Marias Islands).

Distribution. Galápagos Archipelago (Floreana; Santa Cruz); Tres Marias Islands.

Types. Two specimens, in alcohol, Seymour Bay, Indefatigable, 26 April 1923, W. Beebe. Location of types unknown; not found in American Museum of Natural History or the Museum of Comparative Zoology.

New Galápagos records. Isla Fernandina, Punta Espinosa, 28 January, RLU, intertidal rocks, 1 male (CAS).

Isla Santa Cruz, Academy Bay, 17 February 1964, P. D. Ashlock, at light, 12 males, 11 females (BISH); same locality, 12 February 1964 DQC and ROS, 2 males, 1 female (CAS).

Thalassomya pilipes Edwards.

Thalassomya pilipes Edwards, 1926, Ins. of Samoa, part 6, fasc. 2, p. 60 (male, female; Samoa). Edwards, 1935, Ins. of Samoa, Addenda, part 9, fasc. 3, p. 110 (Galápagos, erroneous synonymy of *longipes* (Johnson). Wirth, 1947, Proc. Hawaiian Ent. Soc., vol. 13, p. 125 (notes).

Distribution. Samoa; Galápagos Archipelago (Fernandina; Santa Cruz); Mexico (Baja California).

Type. Tutuila, Samoa, Leone Road, 24 March 1926 (Judd), 3 males, 1 female, syntypes in British Museum (Nat. Hist.), London.

Galápagos records.

Isla Santa Cruz, Academy Bay, 12 February 1964, DQC and ROS, 2 males, 1 female (CAS); same locality, 17 February 1964, P. D. Ashlock, at light, 12 males, 1 female (BISH).

Additional records. Mexico, Baja California: Agua Verde Bay, 26 March 1953, 1 male. Isla Santa Catalina, 27 March 1953, 1 male. Loreto, 29 March 1953, 1 male. All collected by P. H. Arnaud, Jr., Sefton-Orca Exped. (CAS).

Revillagigedo Islands, Isla Socorro, 1 May 1955, McDonald and Blodget, 1 male (USNM).

Discussion. *Thalassomya pilipes* is distinguished from *T. longipes* (Johnson) by its dark color, appearing almost blackish, and, in the male, by the long, dense, fine, erect hairs on the legs, especially the hind pair. *Thalassomya setosipennis* Wirth (Hawaii) and *T. bureni* Wirth (Florida to Panama and the West Indies) are distinguished by the presence of setae on wing veins M, Cu, and 1st A. In *T. pilipes* the mediocubital fork is located at or just past the level of the tip of the r-m crossvein; in *T. longipes*, it is much further distad.

Family Ceratopogonidae

The ceratopogonids are poorly represented in the Galápagos collections with one intertidal species with three inland species, two of which were probably introduced by man.

Forcipomyia galapagensis (Coquillett).

(Figures 1, 2.)

Ceratopogon galapagensis Coquillett, 1901, Proc. Wash. Acad. Sci., vol. 3, p. 372 (male; Albemarle). Johnson, 1924. Zoologica, vol. 8, p. 86 (South Seymour).

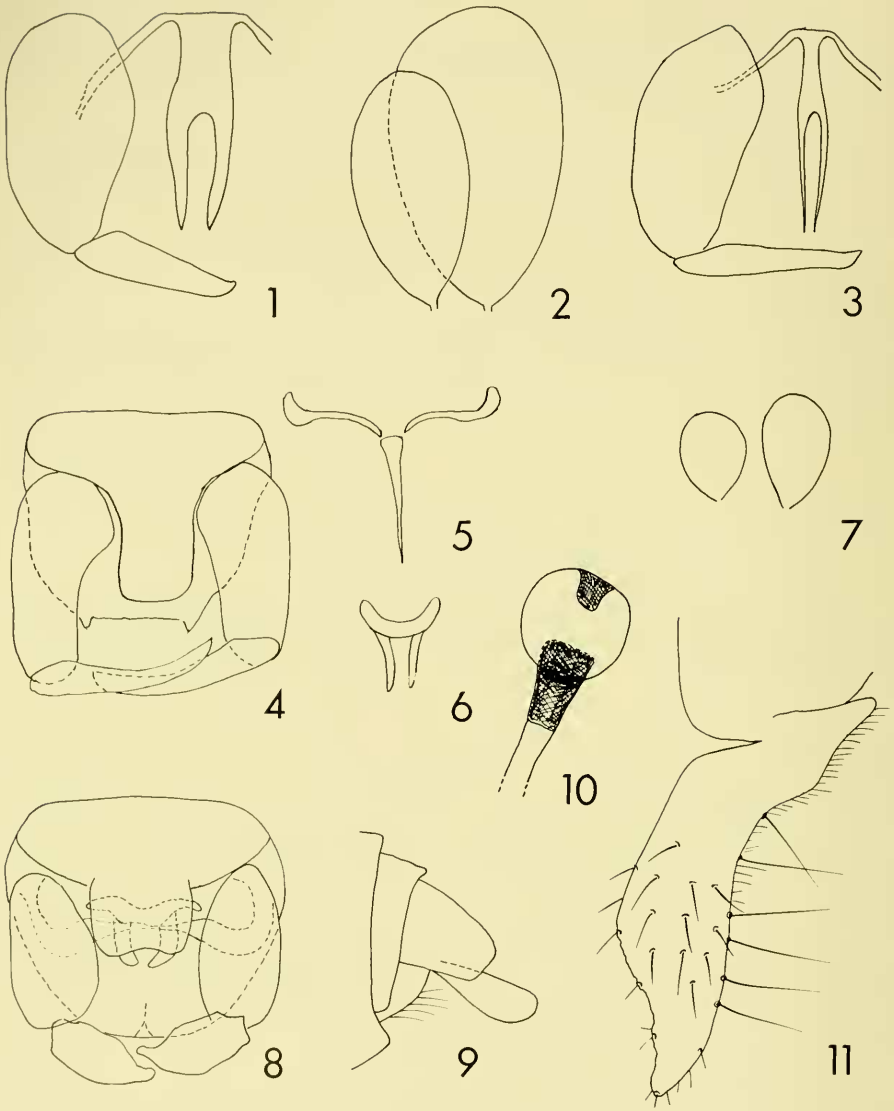
Dasyhelea galapagensis (Coquillett); Curran, 1934, Proc. California Acad. Sci., 4th ser., vol. 21, p. 149 (Gardner; Indefatigable).

Forcipomyia fuliginosa (Meigen); of Wirth, in part, 1956, Ann. Ent. Soc. Amer., vol. 49, p. 357 (erroneous synonymy of *galapagensis*). Linsley and Usinger, 1966, Proc. Calif. Acad. Sci., 4th ser., vol. 33, p. 165 (Galápagos: Baltra; Gardner; Isabela; Santa Cruz).

Distribution. Galápagos Archipelago (Baltra; Fernandina; Gardner; Isabela; Pinzón; Santa Cruz).

Types. Syntypes, 3 males, Tagus Cove, Albemarle Island, 22 January 1899 (type no. 4714, USNM). Lectotype here selected, pinned male with genitalia on slide.

Male, female. Length of wing 1.25 mm. Thorax, abdomen, and palpi dull brown; legs and antenna straw yellow; halteres whitish. Mesonotum uniformly covered with decumbent, narrow, brassy, scalelike hairs; scutellum with long yellowish bristly hairs; abdomen with dense brown decumbent hairs above, yellowish hairs on sides and venter. Wing with uniformly black, dense macrotrichia, those over radial veins longer and denser, appearing more intense black-



FIGURES 1–11. *Forcipomyia, Dasyhelea,* and *Canace* species. Figure 1, *F. galapagensis*, male genitalia (part); figure 2, *F. galapagensis*, spermathecae; figure 3, *F. juliginosa*, male genitalia (part); figures 4–6, *D. paracincta*, male genitalia; figure 7, *F. juliginosa,* spermathecae; figure 8, *D. spathicercus*, male genitalia; figure 9, *D. spathicercus*, apex of female abdomen, lateral view; figure 10, *C. cavagnaroi*, spermatheca; figure 11, *C. cavagnaroi*, male genital process, mesal face.

ish; costa extending to 0.53 of wing length. Palpus with third segment broadly swollen nearly to tip, with very deep pit opening by a narrow distal pore. Hind basitarsus 0.70 as long as second tarsomere. Spermathecae (fig. 2) greatly enlarged, ovoid, with slender, short neck. Male genitalia (fig. 1); dististyle relatively stout, straight with blunt, slightly bent tip; aedeagus broad, distally rounded with slight indication of median distal point; parameres fused proximad for half of total length, relatively stout.

New Galápagos records. Isla Fernandina, west side, 1100 feet, 5 February, 1964, DQC, 4 males, 13 females.

Isla Gardner, 22 April 1932, M. Willows, Jr. (Templeton-Crocker Exped.), 2 males, 1 female (USNM).

Isla Pinzón, summit and upper caldera areas, 7 February 1964, DQC, 3 females (CAS).

Isla Santa Cruz, Academy Bay, February 1964, DQC and ROS, 21 males, 16 females (CAS); same locality, 17 February 1964, P. D. Ashlock, at light, 31 males, 10 females (BISH). Grassland, 750 meters, 5 may 1964, DQC, 1 female (CAS). Table Mountain, 440 meters, 16 April 1964, DQC, 1 female (CAS). Horneman Farm, 220 meters, 2 April 1964, DQC, 2 females (CAS).

Discussion. From a study of the pinned type, I synonymized *F. galapagensis* with the widespread caterpillar parasite *F. fuliginosa* (Meigen) in 1956 (location cited), but examination of slide material from the present series reveals abundant differences. In *F. fuliginosa*, the hind tarsal ratio is only about 0.5, the hind femur is distinctly infuscated at the apex, the spermathecae (fig. 7) are less than half the size of those of *F. galapagensis*, and in the male genitalia (fig. 3), the dististyle is much more slender, the aedeagus is not so broad and is more pointed distally, and the parameres are much more slender.

Forcipomyia genualis (Loew).

Ceratopogon genualis Loew, 1866, Berlin Ent. Ztschr., vol. 9, p. 128 (Cent. 6, no. 1) (male, Cuba).

Forcipomyia genualis (Loew); Johannsen, 1943, Ann. Ent. Soc. Amer., vol. 42, p. 777. Wirth, 1965, in Stone *et al.*, U. S. Dept. Agr. Handb. 276, p. 125 (synonym: *F. raleighi*).

Forcipomyia raleighi Macfie, 1938, Proc. Roy. Ent. Soc. London (B), vol. 7, p. 160 (Trinidad). Saunders, 1956, Canad. Jour. Zool., vol. 34, p. 660 (redescribed; figures all stages; Trinidad).

Distribution. Southeastern United States; West Indies; Bermuda; south to Brazil; Galápagos Archipelago (Darwin; Santa Cruz).

Types. Type of *F. genualis*, Cuba (Gundlach), in Mus. Comp. Zoology, Harvard Univ.; type of *F. raleighi*, male, St. Augustine, Trinidad, 30 May 1936, A. M. Adamson, in British Museum (Nat. Hist.), London.

Galápagos records. Isla Darwin, 29 January 1964, DQC, 2 males (CAS).

Isla Santa Cruz, Academy Bay, 17 February 1964, P. D. Ashlock, at light, 53 males, 48 females (BISH); same locality, February 1964, DQC and ROS,

6 males, 15 females (CAS). Horneman Farm, 220 meters, 2 April 1964, DQC, 1 male (CAS).

Discussion. The present material fits the species well as redescribed by Saunders (location cited), thus considerably extending the known range of this common and widespread midge. The larvae are found in a wide variety of rotting plant material, and the species may have been introduced by commerce.

Dasyhelea paracincta Wirth, new species.

(Figures 4–6.)

Male, female. Length of wing 1.30 mm. Nearly identical with the North American *D. cincta* (Coquillett). Thorax and abdomen blackish; abdominal terga with narrow whitish posterior bands, pleural membrane with black-mottled streaks; mesonotum variably pollinose bluish gray, mottled with black dots at the seta bases, humeral corners yellowish, a tuft of long black hairs in middle of disc; scutellum yellowish, dark in middle. Antenna with lengths of segments in proportion of 15-12-12-12-12-12-12-13-18-20-20-20-22; last segment with long terminal papilla. Wing with costa long, extending to 0.60 of wing length; radial cells long and slitlike; wing with abundant long macrotrichia; halter blackish, knob with a white spot on one side. Legs dull straw-yellow; knee spots brownish; hind basitarsus 1.9 as long as second tarsomere. Spermathecae two, subequal, each measuring 0.058 mm. by 0.043 mm., ovoid with short, slender neck; rudimentary third spermatheca present. Male genitalia (figs. 4–6) with ninth tergum broader than long, posterior margin rounded with small apicolateral processes; ninth sternum bearing a median posterior quadrate lobe slightly longer than broad with posterior corners rounded; basistyle moderately slender; dististyle long and slender, slightly curved, with moderately slender, bluntly pointed tip; aedeagus (fig. 6) with anterior arch low, the posterior submedian sclerotized points long and slender; parameres (fig. 5) with median bladelike process very slender and pointed caudad.

Distribution. Galápagos Archipelago (Isla Santa Cruz).

Types. Holotype female, 5 female paratypes, Isla Santa Cruz, Academy Bay, January–February 1964, DQC and ROS (CAS). Allotype male, 7 male and 4 female paratypes, same locality, 17 February 1964, P. D. Ashlock, at light (BISH).

Discussion. This species is a typical member of the cincta Group, which, in the Western Hemisphere, contains *Dasyhelea cincta* (Coquillett), *D. brookmani* Wirth, *D. maculata* Macfie, *D. albopicta* Ingram and Macfie, and *D. australis* Wirth. *Dasyhelea cincta*, which occurs from Florida and California to the West Indies, is nearly identical with *D. paracincta,* but the anterior arch of the aedeagus is much higher, and submedian points are much shorter, and the dististyles are stouter proximally and more curved. *Dasyhelea albopicta* from southern Chile has the male aedeagus much like that of *D. paracincta*, but the

median posterior lobe of the ninth sternum is constricted anteriorly and the legs are extensively infuscated.

Dasyhelea spathicercus Wirth, new species.
(Figures 8, 9.)

Male, female. Length of wing 1.17 mm. Color of thorax and abdomen in specimens preserved in alcohol uniform dark brown; legs straw yellow, knee spots blackish; antenna brown, proximal halves of segments 3–10 yellowish; palpi pale; halteres grayish. Antenna with length of segments in proportion of 12-10-10-10-10-10-9-9-10-10-10-10-14, tenth segment 0.6 as broad as long; last segment without terminal papilla; *Dasyhelea*-type tessellations present only on distal five segments. Palpal segments with lengths in proportion of 6-10-18-4-10; fourth segment thus unusually short; third with a few scattered sensilla. Hind basitarsus 2.5 as long as second tarsomere. Wing with costa extending to 0.59 of wing length; radial veins strongly developed; macrotrichia absent except a few very stout setae near apical wing margin; wing appearing milky gray due to strongly developed microtrichia. Female abdomen with ninth tergum elongated, appearing rooflike over the recessed and hairy eighth sternum; cerci (fig. 9) greatly elongated in a paddlelike flap; spermathecae two, slightly unequal, measuring 0.046 mm. by 0.042 mm. and 0.042 mm. by 0.035 mm., slightly ovoid without sclerotized necks. Male genitalia (fig. 8) with ninth tergum about as broad as long, rounded caudad, without apicolateral tubercles; ninth sternum with a quadrate caudomedian lobe covering the aedeagus, the posterior margin slightly bilobate. Aedeagus with heavily sclerotized anterior band, slightly arched in middle, bearing a submedian pair of arcuate sclerites with posterior points directed ventrad. Parameres with broad, bandlike lateral apodemes with mesal ends narrowed and meeting on midline, median sclerite absent.

Types. Holotype female, allotype male, 7 male and 36 female paratypes on slides, 25 female paratypes in alcohol, Isla Fernandina, Punta Espinosa, Galápagos Islands, 28 January 1964, RLU (CAS).

Discussion. This species is readily distinguished by the the cloudy gray wings without appreciable macrotrichia and by the peculiar development of the female cerci and the male genitalia. *Dasyhelea calvescens* Macfie from Hawaii and the Revillagigedo Islands, another intertidal species, has cloudy gray wings without macrotrichia, but the male genitalia are quite different, and the female cerci are normal. The two species probably are closely related, however.

Culicoides pusillus Lutz.

Culicoides pulsillus Lutz, 1913, Mem. Inst. Oswaldo Cruz, vol. 5, p. 52, (Brazil). Wirth and Blanton, 1959, Proc. U. S. Nat. Mus., vol. 109, p. 292 (redescribed; figs.).

Distribution. Florida; West Indies, and Mexico to Brazil, Galápagos Archipelago (Santa Cruz).

Type. Female, Manguinhos, Brazil, in Instituto Oswaldo Cruz, Rio de Janeiro.

Galápagos records. Isla Santa Cruz, Academy Bay, Darwin Research Station, 18 February 1964, ROS, 1 female (CAS).

Discussion. This blood-sucking species is widely distributed in the Neotropical Region and breeds in rotting plant materials such as banana stems, coconuts, manure, and animal bedding material. It could very well have been introduced into the Galápagos Islands through the agency of man.

Family Canaceidae

The "beach flies" are closely similar in appearance and habits to the Ephydridae though they are more closely related to the Milichiidae and Sphaeroceridae. The immature stages are nearly always found in the intertidal zone where the larvae feed on algae on wave-splashed rocks or sandy beaches. Three genera and 12 species have been found in the Galápagos Islands.

Canace snodgrassii Coquillett.

Canace snodgrassii Coquillett, 1901, Proc. Wash. Acad. Sci., vol. 3, p. 378 (male, female; Albemarle). Cresson, 1936, Trans. Amer. Ent. Soc., vol. 62, p. 264 (redescribed). Wirth, 1951, B. P. Bishop Mus. Occas. Papers vol. 20, p. 260 (redescribed; figures male, female genitalia).

Distribution. Galápagos Archipelago (Fernandina; Isabela; Santa Cruz).

Galápagos records. Isla Fernandina, 13, 26 January 1899, 2 males, 2 females (paratypes in USNM).

Isla Isabela, 23 January 1899, 5 males, 5 females (type and paratypes in USNM).

Isla Santa Cruz, Academy Bay, 25 January 1964, DQC and ROS, sweeping coastal plants, 1 male, 2 females (CAS).

Discussion. This species differs markedly from the other two Galápagos species of *Canace* in its larger size, possession of 4 pairs of fronto-orbitals, 4–6 pairs of interfrontals, a prominent anteroventral comb of 4–6 short, stout, black spines on the fore femur, a distinct slender hooked tip on the ventral genital process of the male ninth tergum, and slender, elongate, curved, female genital lamellae.

Canace maritima Wirth.

Canace maritima Wirth, 1951, B. P. Bishop Mus., Occas. Papers, vol. 20, p. 263 (male, female; Bartholomew; figures genitalia).

Distribution. Galápagos Archipelago (Bartholomew.)

Types. Holotype male, allotype female, Bartholomew Island, July 1948, K. Vinton, edge mangrove (type no. 59, 967, USNM).

Discussion. This species lacks the anteroventral comb of short, thick, black spines on the fore femure found in *C. snodgrassii* Coquillett but possesses the posteroventral row of stout, spinelike, black bristles on the male mid femur found in *C. cavagnaroi,* new species, *C. blantoni* Wirth, and *C. oliveirai* Wirth. It closely resembles *C. cavagnaroi* but differs in having an acute anterior lobe at the base and a narrow constriction just beyond on the ventral process of the male ninth tergum (as figured in Wirth, 1951, location cited).

Canace cavagnaroi Wirth, new species.
(Figures 10, 11.)

Male, female. Length of wing 1.8 mm. Body brownish black, with bluish gray pollen except as follows: mesonotum brownish black, subshining; frons dark brown; face and cheeks lighter gray pollinose; hairs and bristles blackish except very long, fine, whitish hairs on fore coxa and ventrally on proximal portions of fore and mid femora. Wing deeply infuscated dark brown; halter yellowish brown; second costal section 6.0 as long as third; second vein slightly arched anteriorly; third and fourth veins slightly diverging distally; anterior crossvein located at 0.29 the length of discal cell; penultimate section of fifth 1.8 as long as last section. Chaetotaxy as in *C. maritima* Wirth, mid femur of male with a flexor series of 12 stout, moderately long, spinelike bristles from proximal fourth to apex, mid tibia with a row of short, moderately stout, perpendicular bristly hairs on flexor side, other bristles of legs moderately strong, in normal oblique position. Male ninth tergum with semidetached long, sinuate, bladelike genital process (fig. 11) with sharp distal point, the anterior margin more strongly sclerotized and appearing slightly and irregularly denticulate. Female genital lamellae as in *C. maritima*; spermatheca (fig. 10) each with exceptionally long, moderately stout, deeply sclerotized neck, and small, deep apical depression.

Distribution. Galápagos Archipelago (Isabela; Pinta; Santa Cruz; Santa Fé).

Types. Holotype male, allotype female, Isla Santa Cruz, Academy Bay, 24 January 1964, DQC and ROS, beach and coastal collecting (CAS). Paratypes, 6 males, 3 females, as follows:

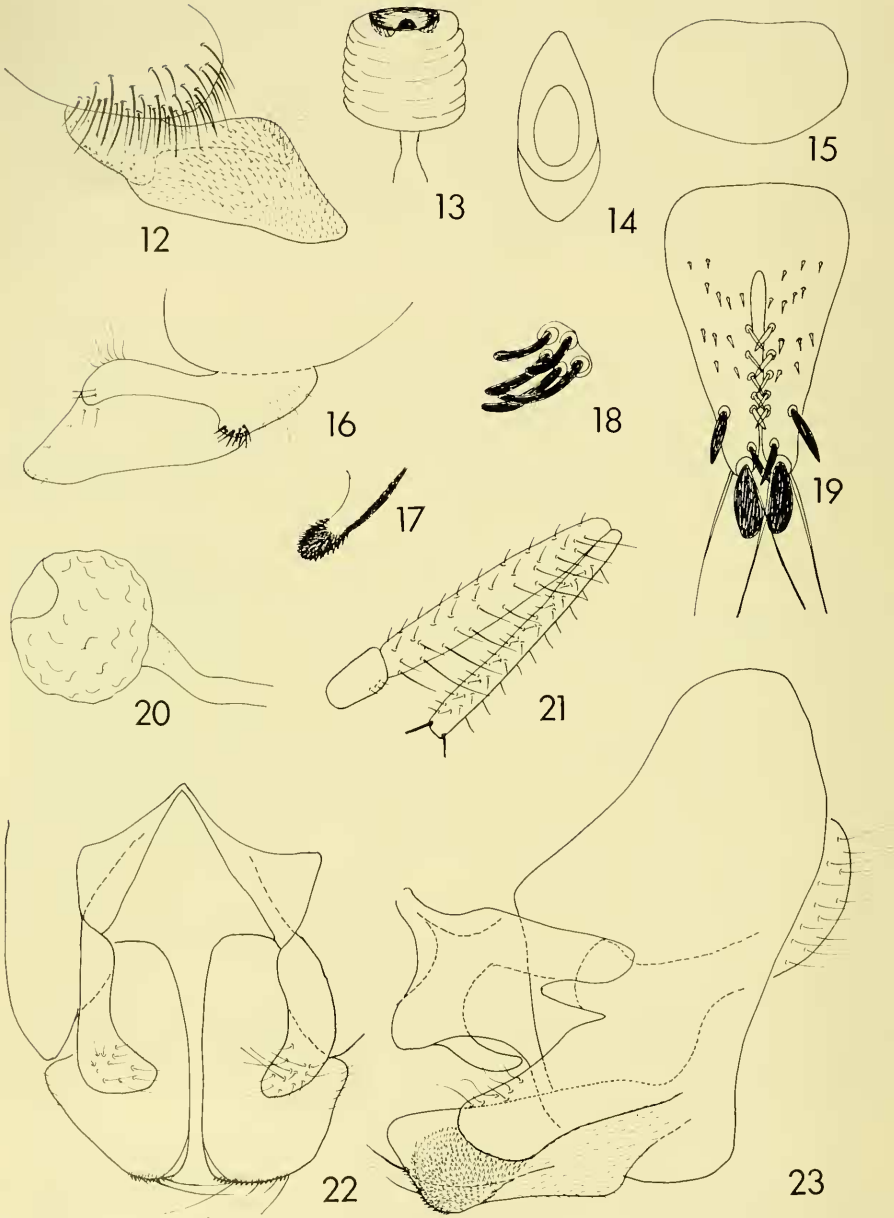
Isla Isabela, 23 January 1899, 2 males (USNM).

Isla Pinta, South Coast, 25 May 1964, DQC, 1 male, 1 female (CAS).

Isla Santa Cruz, same data as types, 3 males, 1 female (CAS).

Isla Santa Fe, 29 May 1889, 1 female (USNM).

Discussion. This species is similar to *C. maritima* Wirth, but the shape of the genital process of the male is quite different. The species is named after Mr. David Cavagnaro, who collected so many of the new and interesting Galápagos Diptera reported in this paper.



FIGURES 12–23. *Nocticanace* species. Figure 12, *N. galapagensis*, male ninth tergum (part) and genital process, lateral aspect; figure 13, *N. galapagensis*, spermatheca; figure 14, *N. curioi*, female atrial sclerotization; figure 15, *N. curioi*, female ninth sternum; figure 16, *N. galapagensis*, male ninth tergum (part) and genital process, mesal face; figure 17, *N. galapagensis*, lobe of male sixth tergum; figure 18, *N. curioi*, lobes of female eighth sternum;

Genus **Nocticanace** Malloch

Nocticanace Malloch, 1933, B. P. Bishop Mus., Bull. 114, p. 4. Type species, *N. peculiaris* Malloch (original designation). Wirth, 1951, B. P. Bishop Mus. Occas. Papers, vol. 20, p. 269 (notes). Wirth, 1954, Pan-Pac. Ent., vol. 30, p. 59 (notes).

The Galápagos species of *Nocticanace* appear to be more closely related to the circum-caribbean *N. texensis* (Wheeler) than to the group of Chilean species including *N. chilensis* (Cresson) or to the species in the central and western Pacific Islands related to *N. peculiaris* Malloch. Externally, they are much alike in their blackish color with dark halteres and deeply infuscated wings and in the details of chaetotaxy [see description of *N. galapagensis* (Curran)]. The fore femur lacks the spinose armature found in some species of the *N. chilensis* group, the female genital lamellae are not especially long or slender, and the pair of long hairs on the female eighth tergum is not so well developed as in the Pacific or Chilean groups. The group of Galápagos species, along with *N. texensis*, is evidently a primitive offshoot of *Nocticanace* and through *N. arnaudi* Wirth from California is closely related to the genus *Canaceoides* Cresson. The Galápagos species of *Nocticanace* form two subgroups, one containing two species having long spinelike costal setae and a long discal cell and the other with six species having normal costa and a shorter discal cell. Within these two groups, examination of the male and female genitalia is nearly always necessary for species identification.

Nocticanace galapagensis (Curran).

(Figures 12, 13, 16, 17.)

Procanace galapagensis Curran, 1934, Proc. Calif. Acad. Sci., ser. 4, vol. 21, p. 160 (Albemarle; female).

Nocticanace galapagensis (Curran); Wirth, 1951, B. P. Bishop Mus. Occas. Papers, vol. 20, p. 274 (combination). Curio, 1964, Ztschr. für Tierpsychologie, vol. 21, p. 794 (in part; habits).

Type. Female, no. 3804, CAS Ent., Tagus Cove, Albemarle Island, 27 May 1932, M. Willows, Jr., Templeton Crocker Expedition. Through the courtesy of Dr. P. H. Arnaud, Jr., I have been permitted to borrow and restudy Curran's holotype, from which the following descriptive notes are taken.

Female. Wing length 2.8 mm. A nearly uniformly dark brownish black species; only the face and cheeks gray pollinose but dark gray; thin pollen on rest of body which is slightly subshining; wings, squamae, and halteres dark brown; antennae, palpi, and legs brownish black. Bristles of head and body

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figure 19, *N. curioi*, female genital lamellae; figure 20, *N. curioi*, spermatheca; figure 21, *N. curioi*, male mid trochanter, femur, and tibia; figure 22, *N. curioi*, male genital processes, anterodorsal view (internal side); figure 23, *N. curioi*, male genitalia, lateral aspect, mesal face.

strong, body setae strong and relatively sparse; three strong divergent fronto-orbitals with two long setae between; inner and outer verticals long; a pair of strong, slightly proclinate, interfrontals at level of anterior ocellus with a pair of strong, slightly divergent ocellars arising on each side and behind anterior ocellus; ocellar triangle with three long setae, three strong upcurved facials with two long setae between and slightly below; palpus with two strong distal bristles, one of them apical. One strong humeral, two strong notopleurals; four strong dorsocentrals with a sparse row of long setae mesad; one strong supra-alar; one strong and one weak postalars; one each side. Two pairs of strong marginal scutellars, disc of scutellum bare; long, fairly numerous setae on humeral convexity. Mesopleuron with two posterior and one ventral, strong bristles and scattered long setae; sternopleuron with one strong bristle and several long bristly hairs. Scutellum very convex, the apex relatively narrow. Legs and abdomen with numerous strong bristly setae and moderately strong bristly hairs. Eighth tergum with a pair of long hairs; genital lamellae slender, each bearing three strong black distal spines. Wing without long spines on costal section I; anterior crossvein located at 0.36 the length of discal cell; penultimate section of fifth vein 2.25 times as long as last section.

Male, female (additional characters from slide-mounted specimens). Male mid femur with a group of 6–10 strong black spinelike flexor bristles proximally. Mid tibia of male with a series of fine pilose hairs distally, continuing on to proximal portion of basitarsus in a tuft of similar hairs on anterior side. Male abdomen not conspicuously humped as in *N. curioi,* pregenital terga not exceptionally swollen; sixth tergum with anteroventral corners prolonged on each side in a slender, heavily sclerotized lobe (fig. 17) with dense black spinules. Male ninth tergum (fig. 12) convex, on ventral side appearing globular with a dense vestiture of stout, black spinose hairs; genital process (fig. 16) as figured, mesal face with a well-developed proximal lobe bearing a tuft of short, black spines. Female genital lamellae slender, each with 10–12 stout preapical dorsal spinules; spermathecae (fig. 13) about as broad as long, with several annulae, distal concavity bearing a distinct papilla.

Distribution. Galápagos Archipelago (Fernandina; Isabela; Pinta; Santa Cruz; Wolf.

New Galápagos records. Isla Fernandina, Punta Espinosa, 28 January 1964, RLU, intertidal rocks, 1 male (CAS).

Isla Pinta, 28 March 1963, E. Curio, from crabs, 3 males (Stuttgart Museum).

Isla Santa Cruz, Academy Bay, 24 January 1964, DQC and ROS, beach coastal collecting, 9 males, 13 females (CAS); same locality, 17 February 1964, P. D. Ashlock, at light, 3 males, 4 females (BISH).

Isla Wolf, 12 January 1962, 16 January 1963, 16 July 1963, E. Curio, from crabs, 10 males (Stuttgart Museum).

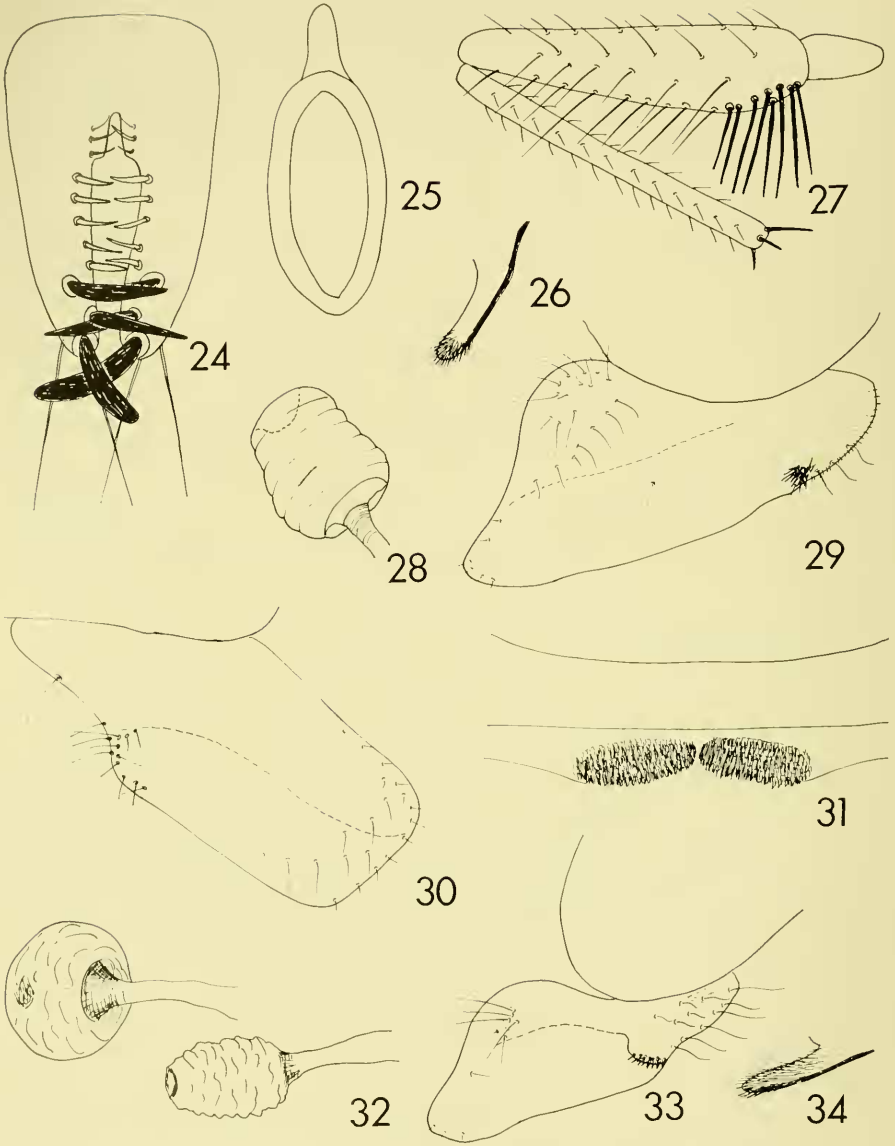
Habits. Curio (1964) observed these flies, in company with other new species of *Nocticanace* described in this paper which were taken in the same series, resting in little aggregations at night on the backs of the crab *Grapsus grapsus* (Linnaeus) which rests in dry places behind the zone of swells. During the day, the flies feed on the thin organic film covering the rocks of the intertidal zone. Possibly the flies depend on the crabs for protective transportation from the waves of the advancing tide during the night.

Discussion. Because the type of *N. galapagensis* is a female, it is extremely difficult to make a positive association of the name with any of the four closely related Galápagos species which so closely resemble it in size, color, and female external characters. I feel reasonably certain of my association, however, on two grounds: (1) the ratios for the discal cell and fifth vein measurements taken from the female type agree closely with the males characterized here and differ from those of *N. curioi* (discal cell ratio 0.41; fifth vein ratio 1.45), *N. darwini* (fifth vein ratio 2.0), and *N. cancer* (fifth vein ratio 1.78); and (2) *N. galapagensis* is a wide-ranging species found on Pinta, Santa Cruz, Fernandina, and Wolf, well encompassing Isabela, the type locality. On the contrary, the related species have more restricted distributions, with *N. curioi* on Pinta and Wolf, *N. darwini* on Genovesa, and *N. cancer* on Pinta.

Nocticanace curioi Wirth, new species.
(Figures 14, 15, 18–23.)

Nocticanace galapagensis (Curran); Curio, 1964, Ztschr. für Tierpsychologie, vol. 21, p. 794 (in part; habits).

Male, female. Externally similar in size, color, and vestiture to *N. galapagensis* (Curran). Wing length 2.40 mm. Anterior crossvein located at 0.41 of length of discal cell; penultimate section of fifth vein 1.45 times as long as last section. Legs moderately slender (fig. 21) without special vestiture of strong bristles on male mid femur or long pilose hair on mid tibia and basitarsus. Fifth and sixth terga of male greatly lengthened, dorsoventrally enlarged, convex, and giving abdomen a humped appearance; anterior margins of fourth to sixth terga heavily sclerotized, the sclerotizations prolonged ventrally as a slender sclerotized lobe on each segment; these lobes without spinulose adornment. Ninth tergum of male (fig. 23) prominently exposed, convex dorsally, forming a broad truncate lobe ventrally on each side without special spinose vestiture; genital process (figs. 22, 23) broad and scooplike, ventral or external face densely spiculose distally with a few long fine distal hairs; a stout, thumb-shaped, hairy lobe borne internally between base of process and ventral margin of tergum proper. Female genital lamellae (fig. 19) moderately long, distal spines stout, subapical spinules scattered; ninth sternum (fig. 15) transversely rounded; lobe of eighth sternum (fig. 18) with 5 black spines; atrial sclerotization (fig. 14) stout; spermatheca (fig. 20) with surface irregularly dimpled.



FIGURES 24–34. *Nocticanace* species. Figure 24, *N. darwini*, female genital lamellae; figure 25, *N. darwini*, female atrial sclerotization; figure 26, *N. darwini*, lobe of male sixth tergum; figure 27, *N. darwini*, male mid trochanter, femur, and tibia; figure 28, *N. darwini*, *darwini*, spermatheca; figure 29, *N. darwini*, male genital process, mesal face; figure 30; *N. scapanius*, male genital process mesal face; figure 31, *N. scapanius*, male sixth tergum, ventral aspect; figure 32, *N. scapanius*, spermathecae; figure 33, *N. cancer*, male genital process, mesal face; figure 34, *N. cancer*, lobe of male sixth tergum.

Distribution. Galápagos Archipelago (Pinta; Wolf).

Types. Holotype male, allotype female, Isla Wolf, 16 January 1963, E. Curio, from crabs (in Stuttgart Mus.). Paratypes, 83 males, 7 females, as follows:

Isla Pinta, 28 March 1963, E. Curio, from crabs, 8 males, 2 females.

Isla Wolf, 1 December 1962, 16 January 1963, 16 July 1963, E. Curio, from crabs, 75 males, 5 females (pinned females could not be separated definitely from *N. galapagensis*).

Discussion. This species is dedicated to Dr. Eberhard Curio of the University of Tübingen, West Germany, who collected the type series and published his valuable observations (1964) on its behavior. *Nocticanace curioi* greatly outnumbered *N. galapagensis* (Curran) in Dr. Curio's collections from Islas Pinta and Wolf, which may indicate that the species is more intimately associated with the crabs on the backs of which they rest at night.

Nocticanace darwini Wirth, new species.

(Figures 24–29.)

Male, female. Nearly identical externally with *N. galapagensis* (Curran). Wing length 2.21 mm.; anterior crossvein located at 0.37 of length of discal cell; penultimate section of fifth vein 2.0 as long as last section. Male with femora (fig. 27) stout and provided with numerous long stout bristles, a group of 8–10 strong, spinelike bristles on flexor side near base; tibiae with short, erect, spinelike hairs; mid tibia and basitarsus without tuft of long pilose hairs. Male pregenital terga not unusually enlarged nor lengthened dorsoventrally; sixth tergum with anteroventral corners heavily sclerotized and prolonged in a slender lobe (fig. 26) bearing a tuft of fine setae at tip. Ninth tergum swollen ventrally as in *N. galapagensis* with a patch of stout, sharp, black spines; genital process (fig. 29) similar to that of *N. galapagensis*, but dorsal swelling located next to tergum proper and provided with numerous fine hairs, and the patch of sharp black spines on mesal face near "heel" much finer. Female genital lamellae (fig. 24) rather short, each bearing only five short spinules along dorsomesal margin; atrial sclerotization (fig. 25) with large lumen and long anterior process; spermatheca (fig. 28) longer than broad, distinctly lamellate in a "beehive" appearance, with distal concavity and base of duct sclerotized a short way.

Distribution. Galápagos Archipelago (Fernandina and Genovesa).

Types. Holotype male, allotype female, Isla Genovesa, 19 June 1963, E. Curio, on crabs (in Stuttgart Mus.). Paratypes, 11 males, 7 females, same data as types. Isla Fernandina, Punta Espinosa, 28 January 1964, RLU, intertidal rocks, 2 males, 2 females.

Discussion. This species is closely related to *N. galapagensis* (Curran) with which it occurs on Isla Fernandina, but it differs slightly in the shape and

vestiture of the male genital process and the shape of the female spermathecae, and it lacks the linear tuft of long fine hairs on the mid basitarsus and tip of the mid tibia in the male.

Nocticanace scapanius Wirth, new species.
(Figures 30–32.)

MALE, FEMALE. Very similar externally to *N. galapagensis* (Curran). Wing length 2.25 mm.; anterior crossvein located at 0.32 of length of discal cell; penultimate section of fifth vein 2.1 times as long as last section. Male femora not unusually stout nor provided with unusually long, stout, flexor bristles; leg hairs in general rather numerous, strong, and spinelike; mid tibia and basitarsus without long fine hairs. Male pregenital segments not unusually swollen; sixth tergum with ventral ends fused on venter in a continuous band (fig. 31) bearing a submedian pair of patches of fine dark setulae; posteroventral corners of fifth tergum fused with ventral band of sixth tergum. Male ninth tergum broad ventrally, without spinose area; genital process (fig. 30) very broad and scoop-shaped, truncate distad, lateral margin quite convex on outer side, mesal margin sharper, with vestiture of a few scattered fine, setose hairs. Female genital lamellae with scattered dorsal stout spines, longer on mesal margin and short and sharp laterally and anteriorly; atrial sclerotization faint and narrow; spermathecae (fig. 32) distinctly unequal in size, the larger one broader than long, the other elongate, both distinctly annulate, with short sclerotized necks, the ducts slender at base.

DISTRIBUTION. Galápagos Archipelago (Isla Fernandina).

TYPES. Holotype male, allotype female (on slides), Isla Fernandina, Punta Espinosa, 28 January 1964, RLU, intertidal rocks (CAS). Paratypes, 7 males, 10 females, same data as types.

DISCUSSION. This species was in the majority in the collection from Isla Fernandina and could be separated from the two other large species, *N. galapagensis* (Curran) and *N. darwini*, new species, by the lack of special armature on the male mid femur and by the broad, scooplike male genital process and paired setulose areas on the ventrally fused sixth tergum.

Nocticanace cancer Wirth, new species.
(Figures 33, 34.)

MALE. Wing length 1.81 mm.; anterior crossvein located at 0.37 of length of discal cell; penultimate section of fifth vein 1.80 as long as last section. Femora not unusually stout nor provided with unusually long, stout, flexor bristles; mid tibia and basitarsus without tuft of long fine hairs. Sixth tergum with sclerotized band on anteroventral margin, produced into a short, slender lobe (fig. 34) bearing fine, dark, fringing setulae its entire length. Ninth tergum without patch of stout spines on ventral margin; genital process (fig. 33) similar

in shape to that of *N. galapagensis* (Curran) but with base more constricted and apex more attenuated, with a group of six long fine hairs on mesal face of dorsal convexity and a well-developed patch of short, sharp, black spines on proximal lobe.

Female. Unknown.

Distribution. Galápagos Archipelago (Isla Pinta).

Type. Holotype male, on slide, Isla Pinta, 28 March 1963, E. Curio, on crabs (in Stuttgart Museum).

Discussion. Although closely related to *N. galapagensis* (Curran) as evidenced by the similarity in shape of the male genital process and lobe of the sixth tergum, this species can readily be distinguished by the lack of strong ventral spines on the femora, the lack of pilose hairs on mid tibia and basitarsus, the lack of strong spines ventrally on the ninth tergum, and the different vestiture of the lobe of the sixth tergum. It is a much smaller species than *N. galapagensis*.

Nocticanace usingeri Wirth, new species.

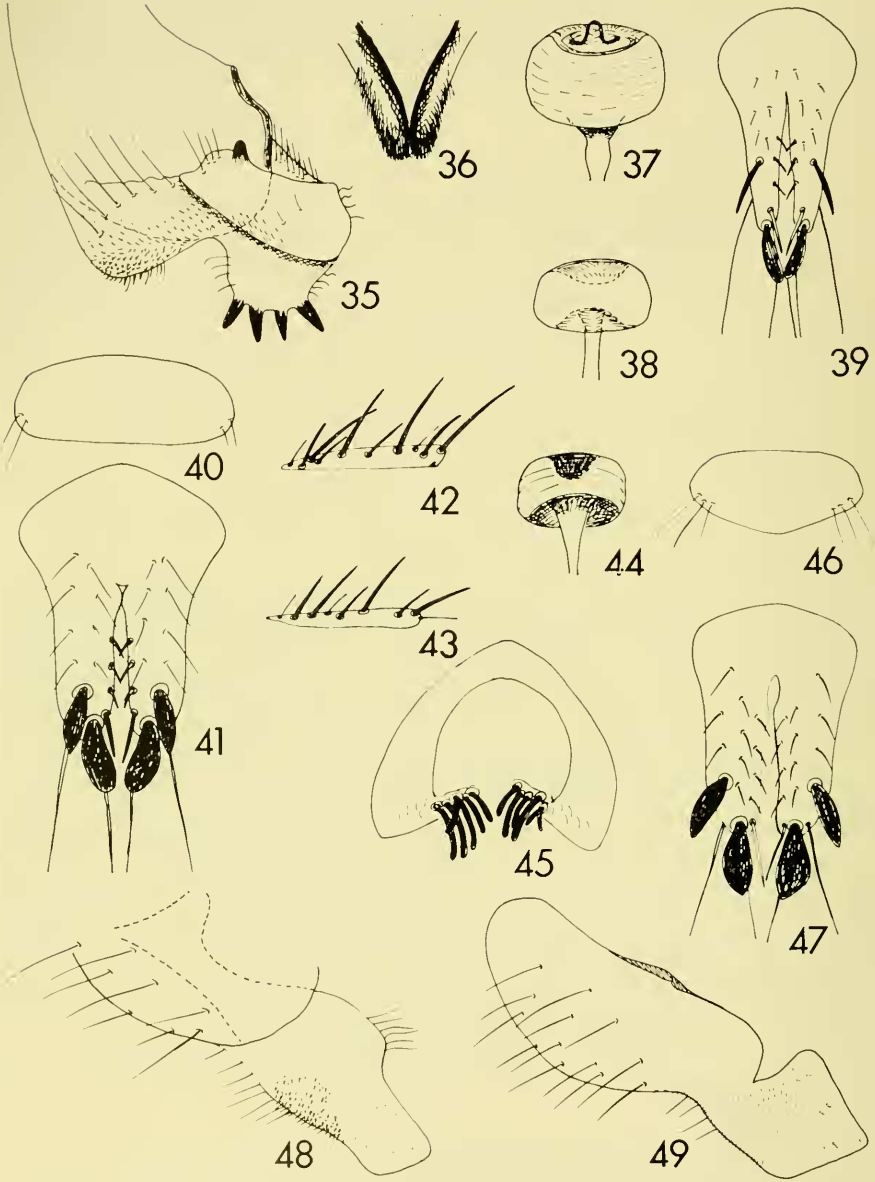
(Figures 35–37, 39.)

Male, female. A small, very dark species without discal setae on the mesonotum. Wing length 1.86 mm.; costa without long, spinelike setae; anterior crossvein located at 0.37 of length of discal cell; penultimate section of fifth vein 1.38 as long as last section. Legs with bristles and hairs normal, sparse, not strongly developed. Male pregenital segments normally developed; sixth tergum with anteroventral corners prolonged in a short, slender lobe (fig. 36) bearing fine dark fringing setulae. Ninth tergum (fig. 35) broadened ventrally on each side; posteroventral corner forming a bluntly rounded lobe bearing short, stout spinules; anteroventral corner with the greatly enlarged genital process turned mesad and dorsad. Genital process (fig. 35) with large rounded posteroventral lobe bearing four large, blunt, black spines; anterior face bearing numerous dorsally slanted fine hairs; distomedian end bearing a small blunt spurlike anterior process and a few long fine hairs. Female genital lamellae (fig. 39) slender, dorsomesal margin with 3–4 short spines and dorsal surface with 6–8 scattered, fine, short hairs; spermathecae (fig. 37) slightly unequal in size, both slightly broader than long, distal end with shallow concavity bearing a distinct apical papilla.

Distribution. Galápagos Archipelago (Isla Fernandina).

Types. Holotype female, allotype male (on slides), Isla Fernandina, Punta Espinosa, 28 January 1964, RLU, on intertidal rocks (CAS).

Discussion. I am very happy to dedicate this distinctive species to my former professor at the University of California, Dr. Robert L. Usinger, to whom I am indebted for the exceptionally fine collection of intertidal Diptera from Punta Espinosa. The small size, nonspinose costa, nonsetose mesonotum,



FIGURES 35–49. *Nocticanace* species. Figure 35, *N. usingeri*, male ninth tergum (part) and genital process, mesal face; figure 36, *N. usingeri*, lobes of male sixth tergum; figure 37, *N. usingeri*, spermatheca; figure 38, *N. spinicosta*, spermatheca; figure 39, *N. usingeri*, female genital lamellae; figure 40, *N. spinicosta*, female ninth sternum; figure 41, *N. spinicosta*, female genital lamellae; figure 42, *N. spinicosta*, first costal section of wing; figure 43, *N. ashlocki*, first costal section; figure 44, *N. ashlocki*, spermatheca; figure 45, *N. ashlocki*,

and distinctive male genital process and female spermathecae will readily distinguish *N. usingeri* from the other species of Galápagos *Nocticanace*.

Nocticanace spinicosta Wirth, new species.
(Figures 38, 40–42, 48.)

MALE, FEMALE. A small species, mesonotum with scattered, long, coarse setae; wing length 1.71 mm.; anterior crossvein located at 0.28 of length of discal cell; penultimate section of fifth vein 4.1 as long as last section; costa with exceptionally long spines, 8–10 on first costal section (fig. 42). Male femora not stout but provided with numerous relatively strong bristles, mid tibia and basitarsus not ciliate; leg hairs relatively strong and spinelike, arising obliquely. Male pregenital segments normal, sixth tergum without sclerotized processes; ninth tergum without stout spines ventrally, genital process (fig. 48) stout basally with dorsomesal patch of long fine hairs and ventrolateral area of fine spicules, attenuated but bluntly angulate distally. Female genital lamellae (fig. 41) short, each with 3–4 short stout spines on dorsomesal margin and 6–8 fine hairs scattered on dorsal side; eighth sternum without sclerotized anterior arch; ninth sternum (fig. 40) transversely elongate oval; atrial sclerotization weak and narrow; spermathecae (fig. 38) much broader than long, with basal and apical depressions, appearing doughnut-shaped.

DISTRIBUTION. Galápagos Archipelago (Isla Fernandina).

TYPES. Holotype male, allotype female (on slides), Isla Fernandina, Punta Espinosa, 28 January 1964, RLU, intertidal rocks (CAS). Paratypes, 3 males, same data as types.

DISCUSSION. Very closely related to *N. ashlocki*, new species, differing in the shape of the male genital process and female spermathecae and in having more spines on the first costal section and fewer strong spines on the female genital lamellae.

Nocticanace ashlocki Wirth, new species.
(Figures 43–47, 49.)

MALE, FEMALE. A small species with long spines on the costa; wing length 1.60 mm.; anterior crossvein located at 0.25 length of discal cell; penultimate section of fifth vein 4.0 as long as last section; 6–8 long spines on first costal section (fig. 43). Male femora not stout nor provided with unusually strong bristles, mid tibia and basitarsus without long cilia. Male pregenital segments normal, sixth sternum without sclerotized processes; ninth tergum without stout spines ventrally; genital process (fig. 49) broad and angulate distally,

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female eighth sternum; figure 46, *N. ashlocki*, female ninth sternum; figure 47, *N. ashlocki*, female genital lamellae; figure 48, *N. spinicosta*, male ninth tergum (part) and genital process, mesal view; figure 49, *N. ashlocki*, male ninth tergum and genital process, lateral view.

without long preapical hairs. Female genital lamellae (fig. 47) short, 10–12 short stout spinules scattered on dorsal side; eighth sternum (fig. 45) with lateral spinose lobes joined anteriorly in a narrow sclerotized arch; ninth sternum (fig. 46) short and broad, with three fine hairs on each side; spermathecae (fig. 44) much broader than long, annulate, with a distinct apical depression.

Distribution. Galápagos Archipelago (Isla Santa Cruz).

Types. Holotype male, allotype female, Isla Santa Cruz, Academy Bay, 24 January 1964, DQC and ROS, on coastal rocks and beach (CAS). Paratypes, 5 males, 12 females, same data as types; 1 female, same locality but 17 February 1964, collected by P. D. Ashlock, for whom this species is named.

Discussion. *Nocticanace ashlocki* and *N. spinicosta*, new species, are closely related and differ greatly from the other Galápagos *Nocticanace* in their small size, long discal cell, and long spines on the costa and in the characteristic shapes of the male genital process, female spermathecae, and female genital lamellae.

Genus **Canaceoides** Cresson

Canaceoides Cresson, 1934, Trans. Amer. Ent. Soc., vol. 60, p. 221. Type species, *Canace nudata* Cresson, by original designation.

The species of *Canaceoides* are similar to those of *Nocticanace* but can readily be distinguished by the presence of discal hairs on the scutellum and a series of four rather than three elongate bristles on the cheek.

Canaceoides angulatus Wirth.

Canaceoides angulatus Wirth, 1969, Proc. Calif. Acad. Sci., 4th ser., vol. 36, no. 19, pp. 556–559.

Distribution. Hawaiian Archipelago; Mexico; Peru; Galápagos Archipelago.

Type. Holotype male, Waimea, Oahu, Hawaii, 31 January 1946, W. W. Wirth (type no. 69,932, USNM).

Galápagos records. Isla Pinta, south Coast, 25 May 1964, DQC, 22 males, 24 females (CAS).

Isla Santa Cruz, Academy Bay, 24 January 1964, DQC, and ROS, 1 female (CAS); same locality, 17 February 1964, P. D. Ashlock, at light, 1 male, 1 female (BISH).

Isla Santa Fe, 5 February 1964, T. Pappenfuss, 11 males, 16 females (CAS).

Family Ephydridae

Paratissa semilutea (Loew).

Cacoxenus semiluteus Loew, 1869, Berlin Ent. Ztschr., vol. 13, p. 51 (Cent. 8, no. 97) (Cuba).
Paratissa semilutea (Loew); Wirth, 1965, in Stone *et al.*, U. S. Dept. Agr. Handb. 276, p. 240 (combination).

Drosophila pollinosa WILLISTON, 1896, Trans. Ent. Soc. London, year 1896, p. 414 (St. Vincent, West Indies).

Paratissa pollinosa (Williston); COQUILLETT, 1900, Canad. Ent., vol. 32, p. 36 (type species of *Paratissa* Coquillett).

DISTRIBUTION. Florida; West Indies to Barbuda and Tobago; Bermuda; Panama; Galápagos Archipelago (Isla Santa Cruz).

TYPES. Type of *P. semilutea* in Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts; of *P. pollinosa*, two syntypes in British Museum (Nat. Hist.), London.

GALÁPAGOS RECORDS. Isla Santa Cruz, Academy Bay, 25 January 1964, DQC and ROS, 1 female (CAS).

Psilopa olga Cresson.

Psilopa olga CRESSON, 1922, Ent. News, vol. 33, p. 137 (Washington).

DISTRIBUTION. North America (Alaska to Quebec, south to California, Colorado, and Texas), Bahamas, El Salvador, Chile, Galápagos Archipelago.

TYPE. Holotype male, Olga, Washington, in Washington State University collection.

GALÁPAGOS RECORDS. Isla Santa Cruz, Academy Bay, 24 January 1964, DQC and ROS, 3 specimens (CAS).

Hydrellia vulgaris Cresson.

Hydrellia vulgaris CRESSON, 1931, Dipt. Patagonia and S. Chile, part 6, fasc. 2, p. 94 (Chile).

DISTRIBUTION. Costa Rica to Chile and Argentina, Juan Fernandez Islands, Galápagos Archipelago.

TYPE. Holotype male, Peulla, Chile, in British Museum (Nat. Hist.), London.

GALÁPAGOS RECORDS. Isla Santa Cruz, Table Mountain, 440 meters, 16 April 1964, DQC, 9 specimens; Grassland, 750 meters, 6 April 1964, DQC, 7 specimens (all CAS).

Paralimna obscura Williston.

Paralimna obscura Williston, 1896, Trans. Ent. Soc. London, year 1896, p. 391 (St. Vincent, West Indies).

DISTRIBUTION. Southern Florida, Bermuda, entire West Indies, Mexico to Argentina, Galápagos Archipelago.

TYPES. St. Vincent, W. I., 7 syntypes in British Museum (Nat. Hist.), London.

GALÁPAGOS RECORDS. Isla Santa Cruz, Academy Bay, 9 February 1964, DQC and ROS, 1 specimen; Table Mountain, 440 meters, 16 April, 1964, DQC, 1 specimen; Grassland, 750 meters, 6 April 1964, DQC, 1 specimen (all CAS).

Isla Santiago, northwest slope, 600 meters, 30 May 1964, DQC, 34 specimens (CAS).

Zeros fenestralis (Cresson).

Ilythea fenestralis Cresson, 1918, Trans. Amer. Ent. Soc., vol. 44, p. 51 (Costa Rica).
Zeros fenestralis (Cresson); Cresson, 1943, Trans. Amer. Ent. Soc., vol. 69, p. 12, pl. 1, fig. 6 (combination).

Distribution. Florida; Cuba; Puerto Rico; El Salvador to Argentina; Galápagos Archipelago.

Types. Holotype male, Cartago, Costa Rica, type no. 6124, Academy of Natural Sciences of Philadelphia.

Galápagos records. Isla Santa Cruz, Table Mountain, 440 meters, 16 April 1964, DQC, 2 specimens (CAS); Grassland, 750 meters, 6 April 1964, DQC, 4 specimens (CAS).

Isla Santiago, northwest slope, 600 meters, 30 May 1964, DQC, 2 specimens (CAS).

Philygria galapagensis Wirth, new species.

Male, female. Wing 1.8 mm. long, 0.7 mm. broad. Dull brownish above; sides and anterior margin of mesonotum, pleura, and spots on sides of abdominal terga 1–3 slight gray pollinose; face light gray granulose, slightly yellowish in midportion; antennae brown; legs brown, femora darker, tarsomeres 1–4 yellowish; halter brown; mesonotum slightly vittate; abdominal terga 5–6 slightly shining in female, highly polished black in male.

Wing deeply infuscated with grayish brown; with prominent pattern consisting of two large blackish spots, one over each crossvein; a small blackish dot at tip of first vein and at base of second vein; small whitish area at tip of costal cell; whitish areas adjacent to dark spot on anterior crossvein in first basal cell and near bases of submarginal and first posterior cells; three distinct whitish spots adjacent to dark spot on posterior crossvein near apex of discal cell and near wing margin in second and third posterior cells; an indistinct pale area near base of third posterior cell; second costal section 2.4 times as long as third, last section of fourth vein 1.35 times length of preceding section.

Distribution. Galápagos Archipelago (Fernandina; Pinzón; Santa Cruz).

Types. Holotype female, allotype male, Isla Fernandina, west side, 1100 feet, 5 February 1964, DQC (CAS). Paratypes, 5 males, 3 females; Isla Fernandina, same data as types, 3 males, 2 females (CAS, USNM). Isla Pinzon, summit and upper caldera area, 7 February 1964, DQC, 1 male (CAS). Isla Santa Cruz, Grassland, 750 meters, 6 April 1964, DQC, 1 male, 1 female (CAS, USNM).

Discussion. *Philygria longipennis* (Hendel), the only other described Neo-

tropical species, can be easily distinguished by its long narrow wing without prominent light and dark spots, only the crossveins being slightly infuscated.

Dimecoenia gilvipes (Coquillett).

Ephydra gilvipes COQUILLETT, 1901, Proc. Wash. Acad. Sci., vol. 3, p. 377 (Albemarle).
Dimecoenia gilvipes (Coquillett); CRESSON, 1935, Trans. Amer. Ent. Soc., vol. 61, p. 353 (notes).

DISTRIBUTION. Galápagos Archipelago (Isla Isabela).

TYPES. Holotype male, 5 female paratypes, Albemarle Island, 13 February 1899 (Type no. 4429, USNM).

DISCUSSION. As pointed out by Cresson (location cited), *D. gilvipes* is similar to *D. chilensis* (Macquart), a widespread Chilean species with yellow legs, but *D. gilvipes* is more metallic blue to green, and the pollinose vestiture is gray to whitish, scarcely anywhere yellowish. The median hump on the upper face is more flattened above than in *D. chilensis* and more extensively shining.

Scatella galapagensis Curran.

Scatella galapagensis CURRAN, 1934, Proc. Calif. Acad. Sci., ser. 4, vol. 21, p. 161 ("male" [sic], Chatham).

DISTRIBUTION. Galápagos Archipelago (Isla San Cristobal).

TYPE. Holotype female, Chatham Island, 17 April 1932, M. Willows, Jr., Templeton Crocker Expedition (CAS).

DISCUSSION. Re-examination of the holotype through the courtesy of Dr. Paul H. Arnaud, Jr., permits me to support Curran's placement of this species in the *stagnalis* group of *Scatella*. The type is a female, Curran erring in his observation. It is probably most closely related to *S. kuscheli* Wirth of Chile and the Juan Fernandez Islands, but it differs from that species in the following respects: Wing markings much brighter and more definite, the two proximal spots round and the three distal ones slightly transverse; body color uniformly dull brown, only the mesofrons polished black, mesonotum and scutellum slightly shining; the setae in the dorsocentral series just anterior to the suture enlarged, about half as long as the first dorsocentral bristle; scutellum short, much shorter than in *S. kuscheli*.

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